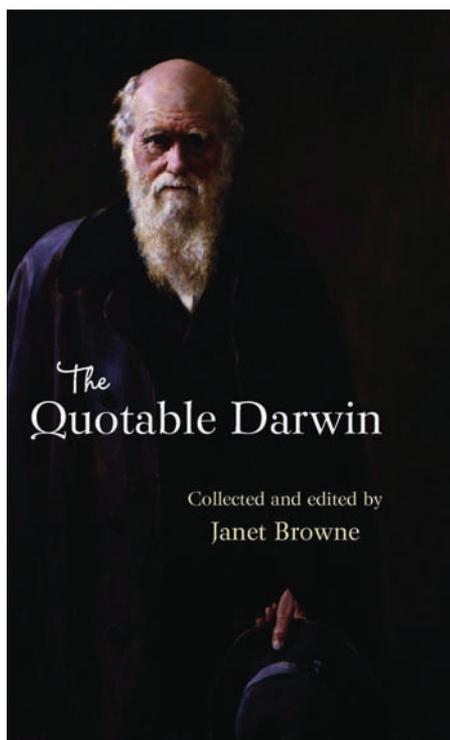


EVOLUTION SPECIAL EDITION

Editor's Note: For our special issue on Evolution commemorating the birth month of Charles Darwin, this column features several recent publications centered on evolution, Darwin, and related topics.



A DEEPER PERSPECTIVE ON DARWIN

The Quotable Darwin. Collected and edited by Janet Browne. 2018. Princeton University Press. (ISBN 9780691169354). 348 pp. Hardcover, \$24.95.

This book is an essential addition to the collection of any person who studies evolution or takes an interest in the history of evolutionary study or Darwin himself. A somewhat small and

pleasantly unassuming text, it represents the life of Darwin through his own words, from writings, publications, correspondences, and other sources. Following him from the earliest days of his life to his explorations on the *Beagle* and through his later years in research and the synthesis of his positions, Browne has captured the essence of Darwin in a way that few besides hardcore Darwin scholars could.

Appropriate for scholar and casual reader alike, the book presents Darwin in all his many roles – young man, student, family man, adept scholar, and conscientious thinker. While many of us speculate about Darwin's thinking from an exterior perspective, he comes to life in these pages as we view his concerns, troubles, joys, excitement, and considerations of science through his own lens.

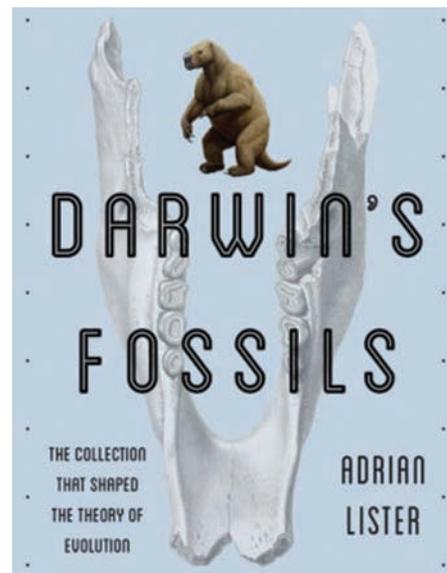
The structure of the book itself is useful, gathering the chapters into six sections: “Early Life and Voyage of the *Beagle*,” “Marriage and Scientific Work,” “Origin of Species,” “Mankind,” “On Himself,” and “Friends and Family.” Each section contains a number of subdivided chapters that address contributing elements to those areas of his life. I personally found this layout to be both easy to navigate and useful, in that I have read through the book as a whole but also have moments when I like to peruse specific sections, according to my thoughts that day or my preparations for class. The format lends itself equally well to either approach.



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DARWIN'S SUPPORTING EVIDENCE

Darwin's Fossils: The Collection That Shaped the Theory of Evolution. By Adrian Lister. 2018.



Smithsonian Books. (ISBN 978-1588346179). 160 pp. Softcover, \$19.95.

Adrian Lister's new book offers an excellent account of the thrust of scientific discovery as it developed within Darwin during his formative years, complete with ample and detailed photographs and artwork of fossil specimens collected by the eminent scientist during the voyage of the *Beagle*. These fossils, collected over a span of five years, were pivotal in the argument for natural selection and the writing of *On the Origin of Species by Means of Natural Selection* (Darwin, 1859). Lister also offers insight into the process and the adventure of scientific thinking and discovery.

In the chapter “The Making of a Naturalist,” the reader learns about the training Darwin received that led to his position aboard the *Beagle*. Upon arrival in South America, he set upon a series of excursions focused on geological inquiry and fossil collection. The book's detailed maps of the *Beagle*'s voyage are magnificent, and the photographs of Darwin's colleagues and mentors are crisp.

Lister discusses several significant finds of extinct mammals, discovered by Darwin during extensive, rigorous, and grueling hiking excursions. Of all the mammal specimens, the giant ground sloth *Megatherium* and the giant hoofed mammal *Toxodon platensis* take precedence, not only due to their size and preservation but for the impact on Darwin's acceptance of transmutation.

A section on petrified forests describes Darwin's hike through the Andes to Agua de la Zorra, where he discovered a gigantic fossilized forest: *Agathoxylon* stumps up to 6½ feet (1.98 m) tall spanning a large area, dating to the Middle Triassic, were well preserved and far predated the formation of the Andes. The position, angle, and location of the stumps solidified Darwin's awareness of past environments and geological change over time. He also collected numerous leaf impressions, imperfect coal, and other petrified wood gathered from South America and Oceania, all consistently found in locations that were clearly inhospitable to supporting such biota at the time.

Darwin was also inspired by the ample marine fossils found in shell-bed elevations far from present coastlines. The variety of invertebrates and vertebrates at stratified positions allowed him to understand the former uplift of the land at various points in South America. One of the many notable examples is when he found marine sedimentary rock and bivalves at the top of Piuquenes pass, over 13,000 feet (3962 m) in elevation. This awareness of geological movement and fossil specimen location heavily influenced his appreciation for geological change over time.

Upon his return from the voyage, Darwin spent time presenting his findings at scientific organizations in London. Indicative of his thought processes at the time were cautious declarations of biological diversity and extinction in relation to environmental pressure. Lister presents quotations that illustrate the development of the theory of evolution, with respect to the dialogue between Darwin and Alfred Russel Wallace in the 1850s. The publication of *On the Origin of Species* in 1859 solidified the foundation of the theory, reinforced in following years by many key fossil finds by others. This collection of fossils by Darwin and others offered prima facie evidence for evolution and supported the formation of the theory of evolution by means of natural selection.

As Lister's book illustrates, Darwin created a model for scientific discovery, a process that we continue to emulate nearly two centuries later. His impact stretches beyond a greater understanding of the world around us, creating a standard for how to conduct research through rigorous immersion in fieldwork and judicious discovery. Lister also shows the importance of the collaborative

efforts of Darwin's colleagues and their debates over his finds.

This book is perfect for casual reading and is an important resource, particularly when paired with Darwin's account of the voyage (Darwin, 1840). The text is peppered with the right amount of insets regarding geological and historical information. The book would also be an excellent companion to introductory biology coursework. The combination of a low price, superb organization, effective writing, and excellent illustrations offers students new to the field of evolution insight into the workings of scientific processes, the foundation of evolutionary theory, and the excitement of scientific discovery. Instructors of introductory biology and/or evolution would prompt student engagement and success by adding this book to their course.



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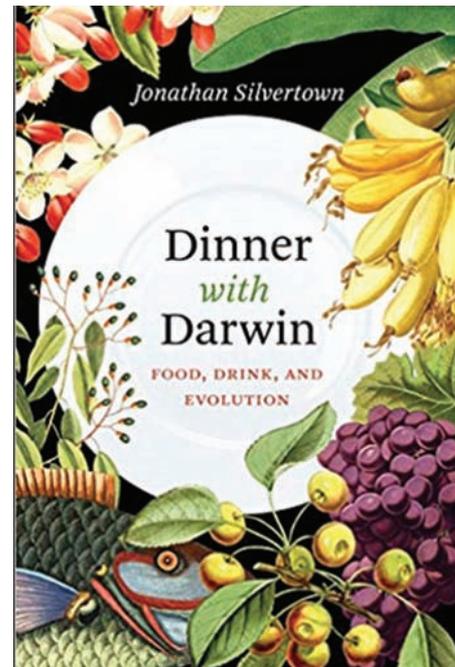
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EVOLUTION IN OUR EVERYDAY LIVES

Dinner with Darwin: Food, Drink, and Evolution. By Jonathan Silvertown. 2017. University of Chicago Press. (ISBN 978-0-226-24539-3). 232 pp. Hardcover, \$27.50.

Nothing brings people together these days quite like good food and good company. *Dinner with Darwin* does an incredible job of inviting the reader to dinner but with a heavy side of science, specifically evolution, and does so in such a way as to invite Darwin himself to your table for



a deeper conversation. While the book is not a collection of recipes and aperitifs, it weaves a story line through the evolutionary history of much of the food and drink we enjoy. The chapters run like courses at the table, addressing the cook and guests ("A Cooking Animal," "Feasting") as well as the courses that have become staples at the modern table (shellfish, bread, soup, desserts, wine, etc.). Each is written through an evolutionary lens of discovery and development, answering the questions of where our tastes for these elements originated, the pathways by which we have learned our trades in food, and the mechanisms that drive some of the traits that make our choices unique.

I love the concept of "evolutionary gastronomy" because food truly is something that brings people together. As I was reading this book, I was able to share a good deal of it with my two sons (self-proclaimed foodies), talking about the scientific background of the things we ate as we traveled, and about how humans have changed along with our diet and command of elements in nature through breeding, domestication, and habits. In those interactions (my boys are seven and 17) I could really see the application of the chapters to conversations with my students across the spectrum of ages and how each part tells a little bit of our story as well as the role of science in our history and daily lives. I must also add that as a person who frequently has these wandering scientific conversations with colleagues and friends over dinner, this book has greatly expanded my own repertoire of topics!